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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,024	07/11/2003	Robert P. Vaudo	ATMI-661	4023
23448	7590	10/25/2005	EXAMINER	
INTELLECTUAL PROPERTY / TECHNOLOGY LAW			COLEMAN, WILLIAM D	
PO BOX 14329			ART UNIT	PAPER NUMBER
RESEARCH TRIANGLE PARK, NC 27709			2823	

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/618,024

Applicant(s)

VAUDO ET AL.

Examiner

W. David Coleman

Art Unit

2823

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 21 September 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 1-41.  
Claim(s) withdrawn from consideration: 42-116.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attachment.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_.  
13. ☒ Other: SNL.

W. David Coleman  
Primary Examiner  
Art Unit: 2823

## **DETAILED ACTION**

### ***After Final Rejection Response before Appeal***

The request for reconsideration filed May 6, 2005 has been entered as of September 21, 2005 and received by the Examiner October 21, 2005.

### ***Status of the Claims After Final Rejection***

Claims 1-116 are pending in the Application

Claims 42-116 are withdrawn from consideration.

Claims 1-41 are rejected based on various prior art.

### ***Response to Arguments***

1. Applicant's arguments filed May 6, 2005 have been fully considered but they are not persuasive.
2. Applicant contends that the term "large area" being defined by the specification of having a diameter of at least 25 millimeters, is crucial to addressing claim 1 of the present application. Claim 1 recites "Large-area, single-crystal semi-insulating gallium nitride".
3. In response to Applicants argument that the term "Large-area" is defined by the specification, Applicants argument with this issue lacks merit for the following reasons.
4. It is well known that various technologist, scientist and engineers have developed gallium nitride substrates with the dimensions as disclosed in Applicants specification.
5. Maruska, H.P. et al., "Development of 50 mm diameter non-Polar Gallium Nitride Substrates For Device Applications", IEEE International Conference on Indium Phosphide & Related Materials, May 16, 2003, pp 567-570. Vaudo et al., U.S. Patent 6,596,079 B1 discloses

various dimensions of gallium nitride substrates having diameters from 2.5 centimeters to greater than 7.5 centimeters (column 3, lines 39-55). Tischler et al., U.S. Patent Application Publication No. 2001/0055660 claim 27 discloses a diameter of at least 2.5 centimeters. Dwilinski et al., U.S. Patent Application Publication No. 2002/0192507 teaches a gallium nitride crystal having a surface area of 2.5 cm<sup>2</sup> [0103]. D'Evelyn et al., U.S. Patent Application Publication No. 2002/0155634 A1 discloses a gallium nitride crystal having a diameter from about 0.02 inches to about 12 inches [0030]. These are just a few examples that discloses what is well known in the art. Although Heitz does not provide the dimensions of the gallium nitride, the dimensions are trivial at best. It is not clear as to why the Applicants believe a non-enforceable claim as disclosed by claim 1 would have any value in a Patent. Therefore the use of your term "Large-Area" is not new in the art nor novel.

6. Applicants contend that because Heitz failed to measure the bulk resistivity of the semi-insulative gallium nitride that the claims which recited the bulk property of resistivity is novel.

7. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Because Heitz teaches a "semi-insulative" material the range of resistivity will inherently be limited to that of a material of being semi-insulative and not conductive.

8. Applicants contend that Cuomo et al., U.S. Patent 6,692,586 B2 herein known as Cuomo fails to teach the term "semi-insulative".

9. In response to Applicants contention that Cuomo fails to teach the term "semi-insulative", Cuomo was not relied upon for the term which is disclosed in Heitz, therefore Applicants arguments are moot.

*Conclusion*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 571-272-1856. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:30 PM.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



W. David Coleman  
Primary Examiner  
Art Unit 2823